

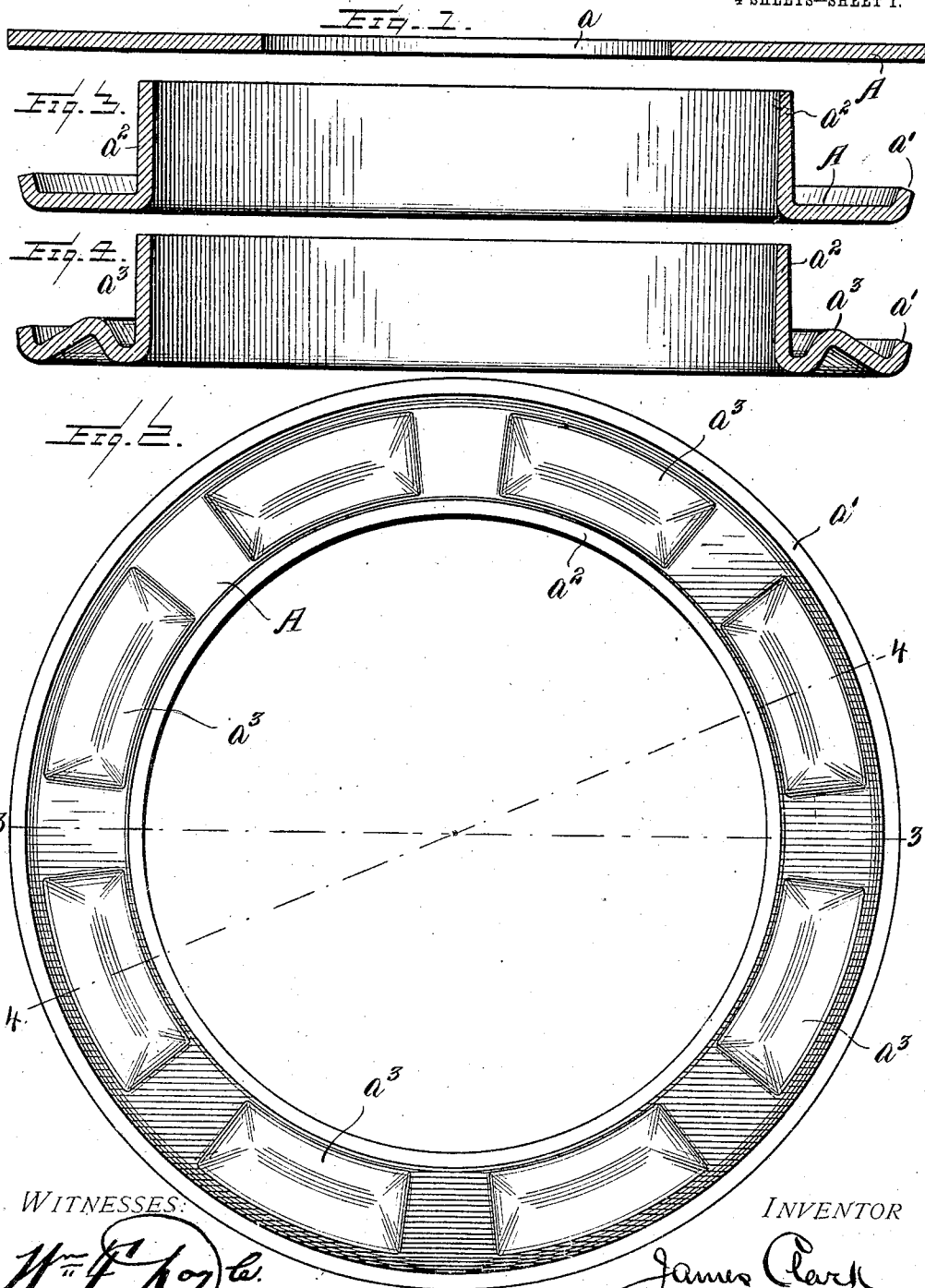
No. 844,250.

PATENTED FEB. 12, 1907

J. CLARK.
CLAMPING RING FOR PIPE COUPLINGS.

APPLICATION FILED DEC. 3, 1906.

4 SHEETS—SHEET 1.



WITNESSES:

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J. N. Moore

INVENTOR

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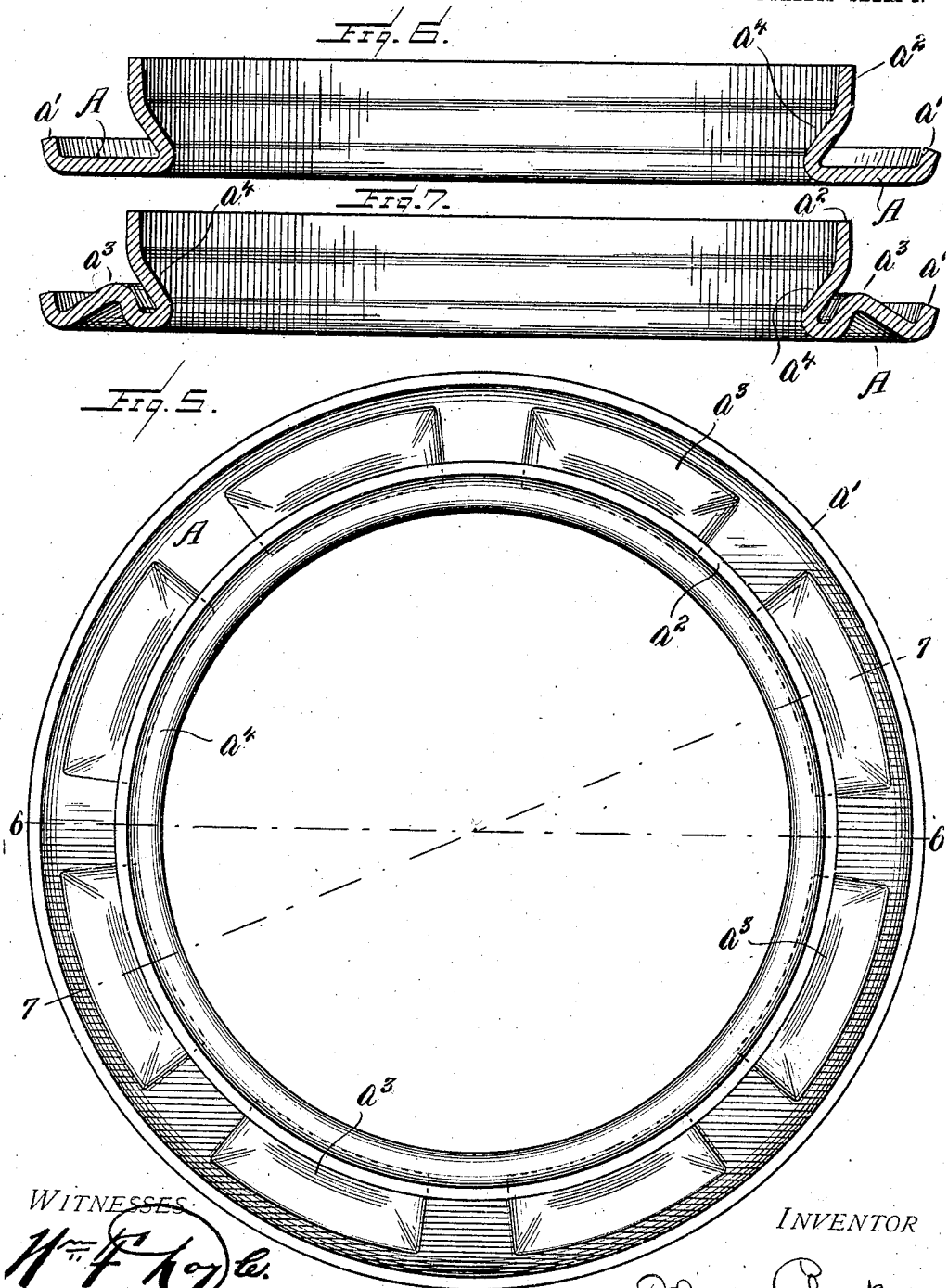
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WITNESSES

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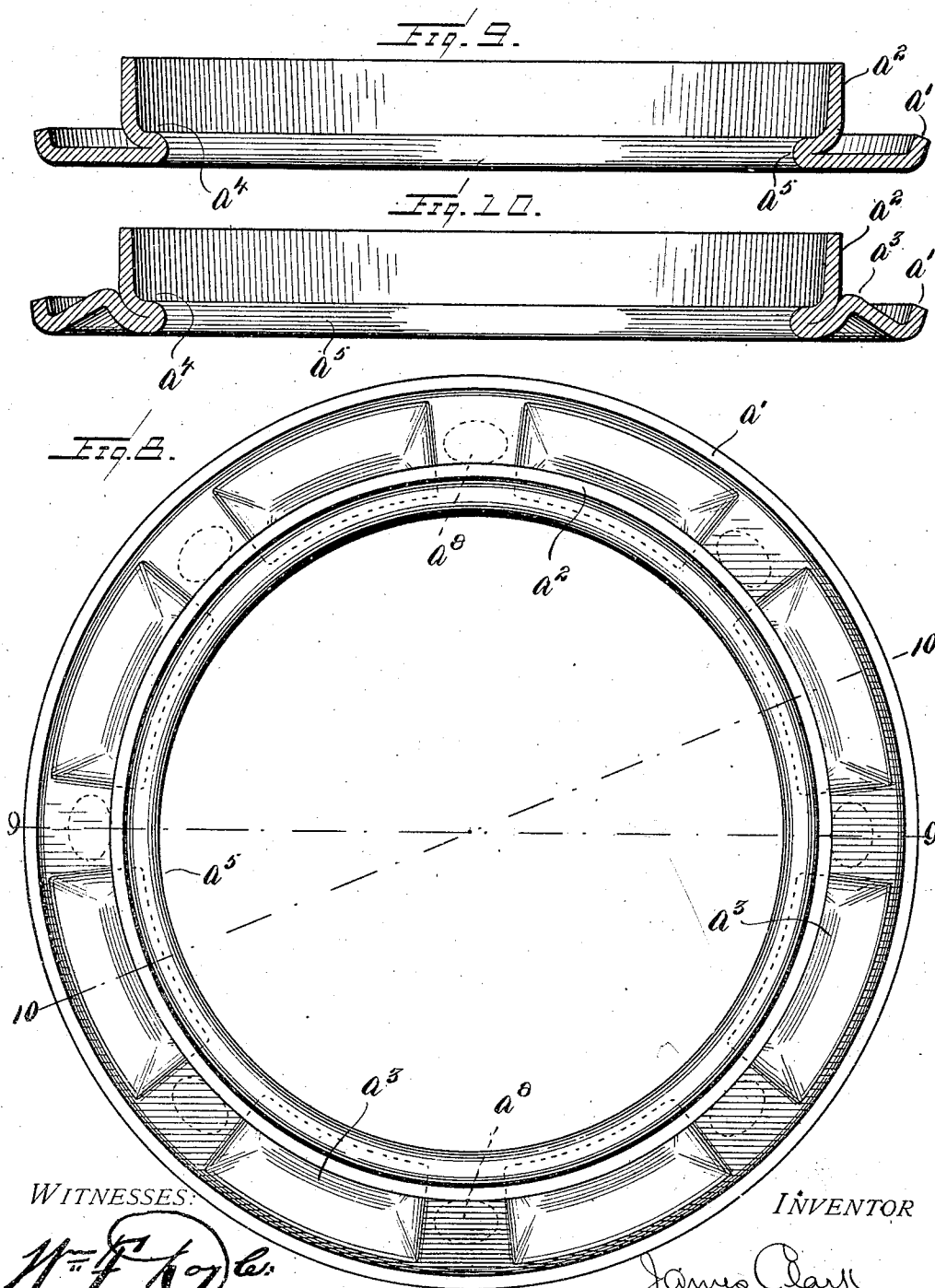
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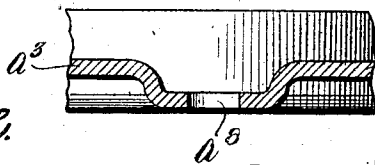
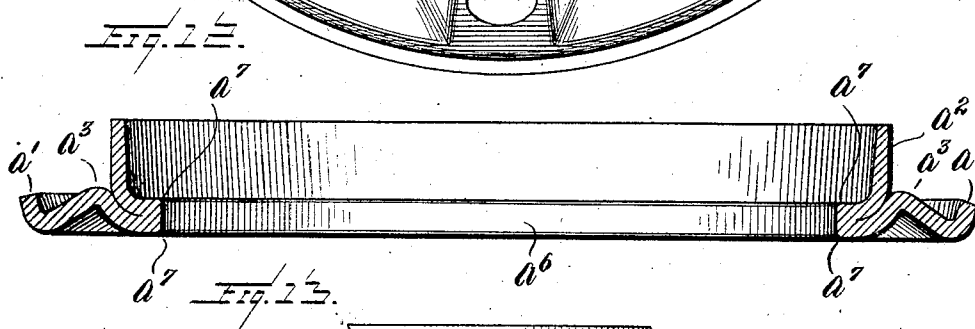
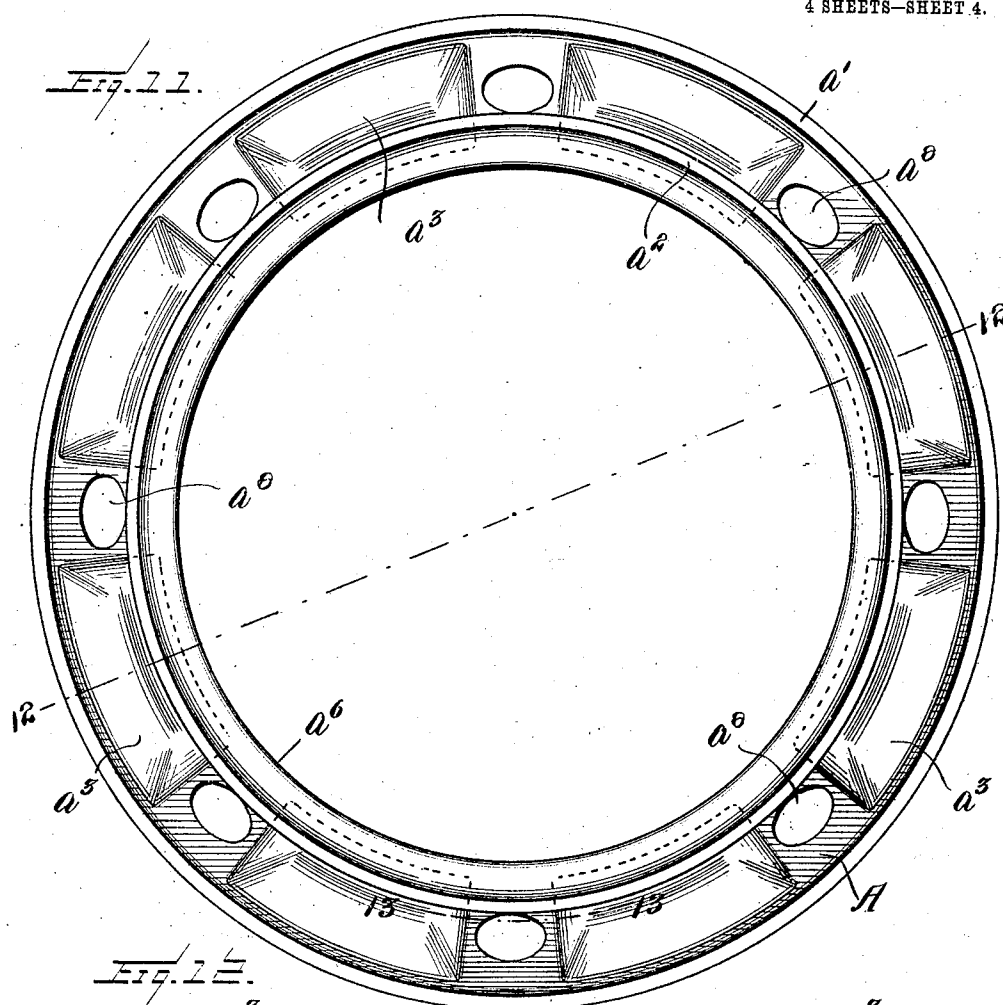
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4 SHEETS—SHEET 4.



~~WITNESSES~~

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UNITED STATES PATENT OFFICE.

JAMES CLARK, OF BRADFORD, PENNSYLVANIA, ASSIGNOR TO S. R. DRESSER
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CLAMPING-RING FOR PIPE-COUPPLINGS.

No. 844,250.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed December 3, 1906. Serial No. 346,145.

To all whom it may concern:

Be it known that I, JAMES CLARK, citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Clamping-Ring for Pipe-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in the novel features hereinafter described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 represents a sectional view of a blank from which my improved flange is preferably made. Fig. 2 is a top plan view of the blank after the first operation to which it is subjected in the production of my improved flange. Fig. 3 is a section on line 3 3 of Fig. 2. Fig. 4 is a section on line 4 4 of Fig. 2. Fig. 5 is a top plan view of the blank after the second operation to which it is subjected. Fig. 6 is a section on line 6 6 of Fig. 5. Fig. 7 is a section on line 7 7 of Fig. 5. Fig. 8 is a plan view of the blank after the third operation to which it is subjected. Fig. 9 is a section on line 9 9 of Fig. 8. Fig. 10 is a section on line 10 10 of Fig. 8. Fig. 11 is a top plan view of the finished clamping-ring. Fig. 12 is a section on line 12 12 of Fig. 11. Fig. 13 is a section on line 13 13 of Fig. 11.

The object of my invention is to produce a clamping-ring or "flange" for use in pipe-couplings, and particularly that class of pipe-couplings in which packing-rings of rubber or other material are employed to secure a tight joint, which consists of a flat annular portion or ring disposed perpendicularly to the axis of the clamping-ring and provided with bolt-holes, an annular flange extending from the inner edge of the flat annular portion and forming a packing-recess, portions of the metal between the edges of the flat annular portion extending out of the plane of said annular portion and into contact with the exterior of the flange forming the packing-recess to reinforce said flange and also

vice versa to reinforce the said annular portion.

In order to render the construction of the clamping-ring more clear, I have illustrated a blank from which it may be made by forging, rolling, or by the use of dies or otherwise and the various changes produced progressively in said blank in the manufacture of the clamping-ring, it being, however, understood that the said clamping-ring may be made by other means and from a different form of blank, if found desirable or convenient.

Referring to the accompanying drawings, A represents the blank of wrought iron or steel, which is in this instance in the form of a flat ring, or, in other words, a flat disk with a central aperture *a*. This blank is operated upon in any suitable manner, and either hot or cold, as preferred, to bend up the outer edge of the blank on one side thereof to form a reinforcing-flange *a'*, to bend up the inner marginal portions of the blank to form a flange *a''*, having a height equal to about one-half the width of the blank on the same side as the reinforcing-flange *a'*, and also to force up separated portions *a'''* of the flat annular portion of the blank (indicated at A, Figs. 2, 3, and 4) out of the plane of said flat annular portion and on the same side as the flanges *a'* *a''*, all as clearly shown in Figs. 2, 3, and 4, and without perforating the ring. The annular flange *a''* is then expanded laterally or perpendicularly to the axis of the clamping-ring, (see Figs. 5, 6, and 7,) the outer portion of said flange being uniformly expanded and the inner portion (indicated at *a'''*) in said figures being inclined outwardly and into proximity to the raised portions *a'''*. The inclined portions *a'''* are then bent downward into curved or quadrantal form in cross-section (see Figs. 8, 9, and 10) and into contact with the flat annular portion A, adjacent to the points of connection therewith, and also into contact with the bent-up portions *a'''*, as clearly shown in Fig. 10, so that the curved portion *a'''* of the flange *a''* is reinforced strongly by the flat annular portion A and the bent-up portions *a'''*, and, conversely, the flat annular portion A is reinforced by the curved portion of the flange.

The clamping-ring may be finished by providing bolt-holes, as indicated in dotted lines

in Fig. 8; but I prefer to upset the curved edge a^5 where the flange a^2 joins the flat annular portion A, as shown at a^6 , so as to produce nearly square corners $a' a'$ (see Fig. 12) to facilitate the retaining of the packing in the packing-recess formed by the flange a^2 . Figs. 11, 12, and 13 therefore show my preferred form of clamping-ring, in which the inner edge of the ring is straight and parallel with the axis thereof, although I may use the rings with rounded surface, as shown at a^5 , Fig. 10, if desired. The bolt-holes (indicated at a^8 , Figs. 11 and 13) are formed in the part of the flat annular portion or ring proper of the device between adjacent bent-up portions a^4 . I also prefer to have the inner face of the flange a^2 inclined outwardly toward its outer edge, as shown in all the figures, and to accomplish this result by slightly drawing and gradually thinning the metal of the flange a^2 when the flange is formed, so that the outer face of said flange may be substantially parallel to the axis of the clamping-ring. It is not essential, however, to have this flange a^2 tapered or diminished in thickness, as the flange may be of the same thickness throughout, if preferred, and the whole flange may be slightly inclined outwardly, although it will still be substantially perpendicular to the plane of the ring portion A.

What I claim, and desire to secure by Letters Patent, is—

1. A clamping-ring for pipe-couplings having a flat annular ring portion disposed perpendicularly to the axis of the clamping-ring, and provided on its inner edge with an annular flange projecting on one side, portions of the ring portion extending out of the plane of said ring portion and into engagement with the flange to mutually reinforce said flange and said ring portion, substantially as described.

2. A clamping-ring for pipe-couplings formed from a single piece of wrought metal and comprising a flat annular ring portion disposed perpendicularly to the axis of the clamping-ring and having an annular flange projecting on one side thereof, said ring portion having portions thereof, at intervals around the same bent out of its plane, and into contact with the said flange, to mutually reinforce said ring portion and said flange, substantially as described.

3. A clamping-ring for pipe-couplings formed in a single piece from wrought metal, comprising a flat annular ring portion disposed perpendicularly to the axis of the clamping-ring, and having separated portions thereof between its edges bent out of the plane of the said ring, without perforating the same, and having an annular flange extending sharply outwardly from the inner

edge of said ring portion, and in contact with said separated bent-up portions of the ring portion, substantially as described.

4. A clamping-ring for pipe-couplings formed in a single piece from wrought metal, comprising a flat annular ring portion disposed perpendicularly to the axis of the clamping-ring, and having separated portions thereof between its edges bent out of the plane of the said ring, without perforating the same, and having an annular flange extending sharply outwardly from the inner edge of said ring portion, and in contact with the said ring portion, adjacent to its union therewith, and also in contact with said bent-up portions of the said ring portion, the said ring portion being provided with bolt-holes between said bent-up portions, in the plane of the ring, substantially as described.

5. A clamping-ring for pipe-couplings formed in a single piece from wrought metal, comprising a flat annular ring portion disposed perpendicularly to the axis of the clamping-ring, and having separated portions thereof between its edges bent out of the plane of the said ring, without perforating the same, and having an annular flange extending sharply outwardly from the inner edge of said ring portion, and in contact with the said ring portion adjacent to its union therewith and also in contact with said separated bent-up portions of said ring portion, the inner surface of the aperture formed at the juncture of the flange with said ring portion being substantially parallel with the axis of the clamping-ring, substantially as described.

6. A clamping-ring for pipe-couplings formed in a single piece from wrought metal, comprising a flat annular ring portion, disposed perpendicularly to the axis of the clamping-ring and having a reinforcing-flange formed on its outer edge, having portions between its edges bent out of the plane of the ring portion on one side thereof and an annular flange extending from the inner edge of said ring portion outwardly, and then substantially perpendicularly to the plane of the ring portion, said flange being in contact with said bent-up portions of the ring portion, the inner wall of said flange being curved adjacent to the ring portion, and being slightly inclined outwardly therefrom to its outer edge, the ring portion being provided with bolt-holes, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES CLARK.

Witnesses:

ALLEN E. CONANT,
H. M. WICK.